Several facts are added to our knowledge of the minor anatomy of the oyster, especially interesting being the demonstrated change in the primitive retractor pedis muscle whereby it becomes a dilator oris.

The paper is well illustrated.

H. F. Moore.

Washington, August 25, 1900.

Anatomie et physiologie végétale. For the use of students of natural science in universities and agricultural schools, etc. By Professor Er. Belzung. Ancienne Librairie, Germer Baillière et Cie. Paris, 1900. 1699 Figs. 8vo. Pp. iii + 1320.

Professor Belzung is the author of text-books on geology, zoology, animal physiology, and animal paleontology, in addition to two or three botanical works besides the subject of this review. Such breadth of authorship undoubtedly relieves him from any taint of narrow specialism. This experience secures for the book in question, however, no new points of view, since it is a purely formal presentation of the better known facts in botany compiled after the manner of an encyclopedia. Perhaps the freshest portion of the book is that taken up with the subject of fermentation, which is given a treatment not usually accorded this phase of botany in general texts. The final section of the work consists of the 'Conclusions' and is devoted to the general characters of protoplasm and plants usually given in the introductory chapters of such texts.

The book leads chiefly to the examination room, and only the most determined enthusiasm could carry through its use a genuine interest in the study of plants.

D. T. MacDougal.

Report of Competitive Tests of Street Car Brakes. By the Board of Railroad Commissioners of the State of New York. 1899. Albany, Brandon Printing Co., Department Printer, 1900. 8vo. Pp. 60; 67 sheets of diagrams.

The report of the electrical expert, Mr. C. R. Barnes, April 4, 1900, details the origin and progress of the work of the N. Y. State Board of R. R. Commissioners, conducted to ascertain the practicability of insuring greater safety in the operation of street cars moved by cable and by the electric current, comparing the newer forms of brake with the older. It is stated that 295 people have been killed and 1599 injured by the electric railways of the State of New York in three years, as shown by the records of the Board. These figures indicate a rapid increase in this form of mortality, due to rising weights of cars and increasing speeds. Cars are now in use weighing 23 tons and speeds exceeding 50 miles an hour have been attained on suburban lines.

In preparing for these trials Messrs. Barnes and Pierson, the electrical engineer of the Metropolitan R'y Co., designed and constructed an automatic recording apparatus for measuring lengths of run under action of the brake. The apparatus was calibrated on 275 feet of track assigned for the purpose by the railway company and the essential observations and data were derived by use of this instrument; the work being performed in New York on the Lenox Avenue line, in the half-mile between 135th and 146th streets. Sixteen brakes—4 air-brakes, 4 electric, 3 hand-power, 2 friction and 2 'track-and-wheel' brakes—were tried.

The reliability of the air-brake is reported to be thoroughly established and a number of them have come into use. But one electric brake, that of the General Electric Co., is in use to any extent. New forms of the older type, the hand-power brake, were tested. They act directly upon the wheels, as usual. The so-called 'friction-brake' is a friction device on the axle, usually disks rotating with the axle and engaging stationary disks, the two sets arranged to be forced strongly against each other, when in action, by means of ingenious mechanisms. The 'track-and-wheel brake' acts on the tracks as well as the wheel. Photographic reproductions of the autographic diagrams obtained from each brake are published, with appended tables exhibiting results numerically.

The usual experiences in such work with dilatory exhibitors, incomplete outfits and occasional miscarriage of the plans of the Board was observed in these trials; but a large amount of new data in a novel field of re-